

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 September 2005 (22.09.2005)

PCT

(10) International Publication Number
WO 2005/087354 A1

(51) International Patent Classification⁷: **B01D 63/08**

[KR/KR]; 23-23, Pyeong-ri, Jochiwon-eup, Yeongi-gun,,
Chungcheongnam-do 339-805 (KR).

(21) International Application Number:

PCT/KR2005/000485

(74) Agent: **PARK, Cheon-Soo**; 5th Fl., Christine Bldg.,
720-21, Yeoksam 2-dong, Gangnam-gu, Seoul 135-920
(KR).

(22) International Filing Date: 23 February 2005 (23.02.2005)

(25) Filing Language:

Korean

(26) Publication Language:

English

(30) Priority Data:

10-2004-0016400 11 March 2004 (11.03.2004) KR

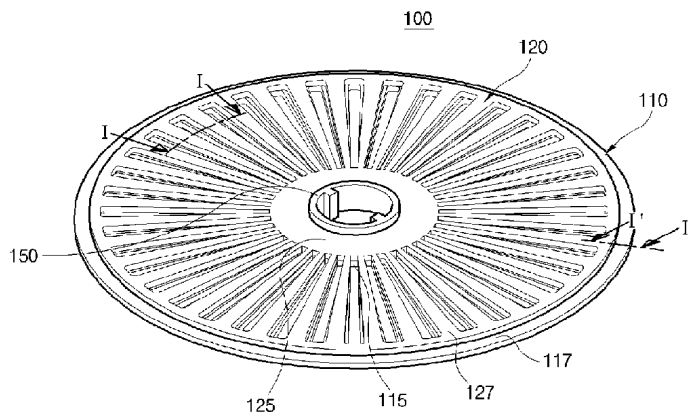
(71) Applicant (for all designated States except US): **ENVIRONMENTAL VISION 21 LTD.** [KR/KR]; Seongbo
Bldg. No. 401, 1129-3, Nae-dong, Gimhae,, Gyeongsang-
nam-do 621-904 (KR).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,
MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

[Continued on next page]

(54) Title: ROTOR FOR GENERATING VORTEX WATER FLOW, AND FILTERING APPARATUS EMPLOYING THE SAME



(57) Abstract: Disclosed are a rotor for generating vortex water flow that creates shear intensity for removing solid material adhered to the separation membranes during the processing of water containing pollutant material, and a filtering apparatus employing the same. The rotor consists of a first rotor having first blades and a second rotor having second blades. The first and the second blades are extended in a radial direction from a rotational axis thereof, and are disposed at positions different from each other in the rotational axis direction. The first blades and the second blades have widths different from each other in a circumferential direction around the rotational axis, or disposed at positions different from each other in a circumferential direction. Protrusions can be attached on outer surfaces of the first blades and/or second blades. The pollutant material adhered to the separation membrane can be removed effectively since various types of vortex water flow are generated over wide range, and the energy loss of the filtering apparatus is reduced.



WO 2005/087354 A1



SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*